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## CHARACTERISTICS OF NEOINTIMAL HYPERPLASIA COMPARED WITH DES AND BMS IN EARLY- AND LATE-PHASE ANALYSIS OF OPTICAL COHERENCE TOMOGRAPHY

i2 Poster Contributions

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**Background-** The features of neo-intimal hyperplasia (NIH) after BMS or DES implantation have not yet been fully characterized. We sought to examine the neointimal characteristics of bare-metal stents (BMS) and drug-eluting stents (DES) by using optical coherence tomography (OCT) focusing on timing of restenosis.

**Methods-** The study included 47 consecutive patients undergoing target lesion revascularization for in-stent restenosis evaluated by OCT during the early-phase (<1 year, n=26) and late-phase (>2 years, n=21) after stent implantation. NIH was categorized into 1) normal neointima, characterized by a homogeneous or layered tissue with predominant high backscatter, 2) layered structure with significant signal attenuation, or 3) lipid-laden intima, with marked signal attenuation and a diffuse border.

**Results-** Normal neointima with a predominant high backscatter was observed in the early phase, regardless of the stent type (BMS 94% vs. DES 75%, p=ns). Lipid-laden intima was frequently found in the late-phase after BMS implantation, comparison with the early-phase after BMS implantation or the late-phase after DES implantation (64% vs. 0% vs. 10%, respectively; p <0.05). In contrast, layered tissue with significant signal attenuation was detected in 60% of patients in the late phase after DES implantation.

**Conclusion-** The different pattern of NIH according to the different stents and phases could help to understand the mechanism of atherosclerotic progression of neointima.